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## THE FRENZIED BATTLE TO REFORM AMERICAN AIR TRAFFIC CONTROL

ROBERT W. POOLE JR.

AMID THE STAGGERING number of political and policy controversies to roil Washington this year, one of the most significant has—forgive me—flown under the radar. It's a battle that will determine the future of the United States air traffic control (ATC) system. And while the particulars may seem esoteric, the consequences could be huge.

Every time you board a plane, you are putting yourself at the mercy of an inefficient system guided by 1930s radio beacons, 1950s radar surveillance, and paper ticker-tape flight tracking. Far from being the envy of the world, the U.S. system for guiding aircraft is a backward analog relic in a digital age.

America's Air Traffic Organization (ATO) is part of the Federal Aviation Administration (FAA), but for years, good-government activists and transportation policy wonks, myself among them, have argued for it to be spun off into a self-supporting nonprofit corporation. Now the House of Representatives looks poised to pass a bill that would do just that. As opponents ramp up their effort to halt that legislation, the debate, which would normally

be confined to interest groups inside the Beltway, has begun to spill over.

Supporters of this much-needed reform—including airlines, the air traffic controllers' union, business groups, and many former transportation officials—argue that a tax-funded government bureaucracy has shown it is incapable of managing a high-tech 24/7 service business. The proponents also note that ATC corporatization (or *privatization*, if you prefer the more controversial name) is now the global best practice, having been adopted by over 60 countries.

On the other side are non-ATC public employee unions, groups representing private plane owners, and government officials from small cities and rural America. The opponents see this effort as a takeover plot by the major airlines, which they claim will charge ruinous user fees to private operators and shut down as loss-makers the control towers at small airports.

If the status quo interests get their way, Americans will be stuck with a system that rations capacity at the busiest airports,



imposes delays due to antiquated equipment and procedures, and costs far more than it should. But there's still a chance for the reform legislation to make it through, clearing the runway for a high-tech system that facilitates faster and more reliable airline trips, increased safety, and lower costs for passengers and taxpayers.

## OLD AND BUSTED

THE PURPOSE OF air traffic control is to keep aircraft safely separated while in flight—in layman's terms, to make sure planes don't collide with each other.

It does this via three basic elements: systems that provide surveillance of all planes in controlled airspace; controllers who direct pilots to carry out procedures to keep traffic organized; and hundreds of facilities, from airport control towers to radar approach control entities to high-altitude en-route centers, where it all takes place. Yet even as the United States boasts the world's largest air traffic system (and even though Americans like to think their economy is the most technologically advanced on Earth), in many ways our ATC efforts are mired in the past.

A bit of context: Most low-altitude airspace, except around airports, is uncontrolled. Private planes are free to fly where they like, with pilots expected to "see and avoid" other craft. But all higher altitudes—the airspace where airliners and business jets (as well as some private planes) fly—are considered "controlled." All planes flying there must file flight plans with ATC and carry a working transponder so the controllers can identify the radar blip that shows up on their screens.

In America in 2017, pilots are still guided by radio beacons on the ground that date to the 1930s, and by instructions delivered via shared voice radio frequencies. Surveillance of U.S. airspace still relies almost entirely on 1950s-era radar, despite widespread use of GPS by ordinary citizens.

The FAA has embarked on a modernization program called NextGen, which includes a plan to supplement radar with a GPS-based technology called ADS-B. But as the deadline of 2020 for all planes to be equipped draws closer, it looks highly unlikely the goal will be achieved. In comparison, the ATC corporations of Britain (NATS) and Canada (Nav Canada) have been using ADS-B across the North Atlantic for years.

Those ATC companies also use digital messaging between controllers and pilots, while the FAA's plan to implement this technology stretches well into the next decade. In the U.S., flight progress strips—that is, literal pieces of paper identifying the flight number, the aircraft type, and bits of information about the flight plan—are hand-carried from one controller to another within an ATC facility as the plane moves from sector to sector in the air. Nav Canada made the switch to on-screen flight progress, where one click shifts the information to the next controller,

more than a decade ago. But the FAA doesn't intend to roll out this technology nationwide until 2026.

Studies by the Government Accountability Office and the U.S. Department of Transportation (DOT) Inspector General paint a consistent picture over several decades: Despite numerous reforms by Congress—of procurement, personnel, and organization—the FAA's major modernization projects nearly always go significantly over budget and are delivered years late. Meanwhile, Nav Canada's very different corporate culture does more of its "development" in-house, using skilled people paid market-based salaries—an approach that has produced considerably more bang for the buck when it comes to getting new technology into the field quickly (and making sure it works when it gets there).

The structure of the United States' air traffic control system is also outdated. Historically, ATC was an integral part of government transport agencies, and that is still the case in America today. Some 68 percent of the FAA's budget went to operating the ATC system in 2016, while the rest was divided between regulating aviation safety and providing airport grants.

Defenders of the status quo like to describe our system as the world's largest, safest, and most efficient. And that ought to be true, since we are the richest country and there are well-known economies of scale in air traffic control. The largest system should be spreading fixed costs among more users, and as a result achieving the lowest unit costs. But international data show that the cost per controlled flight hour (in domestic airspace) is \$453 in the United States vs. \$335 in Canada. We're paying 35 percent more than our northern neighbor, and other quantitative measures point in the same direction.

The problem isn't just the inefficiency, or that ATC sucks up a large portion of the FAA's resources. Where the money comes from puts the system at risk as well.

Aviation excise taxes (mostly on passenger tickets) pay for the vast majority of FAA activities. In 2016, more than 85 percent of the agency's revenues came from airline ticket taxes, while less than 2 percent came from business jets/turboprops and private piston planes. An additional 13 percent came from general taxpayers.

Because it is part of the federal budget, the FAA is subject to overall spending restraints, such as those imposed by the 2011 Budget Control Act. Thus, in 2013, when the so-called sequester went into effect requiring cutbacks in all "discretionary" spending, the FAA took a hit. The agency furloughed its employees one day every other week, closed the controller training academy for nearly a full year, and made plans to shut down 189 small control towers.

More than once, Congress has also let the FAA's authorization lapse. In these instances, the aviation excise taxes that fund the organization stop being collected, causing a revenue

shortfall. And when there's a government shutdown, most of the agency (basically everyone except the controllers themselves) is sent home.

Needless to say, this is no way to run a vital, modern service business.

## PASSENGER TRAVAILS

**AIRLINE DELAYS COST** airlines and passengers some \$33 billion per year in wasted time and excess operating costs. Between 40 and 50 percent of all air travel delays that ripple across the country can be traced to the congested airspace of the New York metro area. Status quo advocates blame this entirely on the limited number of runways at Kennedy, LaGuardia, and Newark. That's part of the problem, but new technology and procedures can do two things: increase the hourly throughput of existing runways and de-conflict the very complex airspace above that huge metro area. The FAA, for its own political or bureaucratic reasons, is leaving the New York airspace until last for modernization, somewhere off in the future, focusing instead on Dallas/Ft. Worth, Atlanta, and other easier cases.

Another problem is the paucity of "direct" flight routes in U.S. airspace. Most flights still follow 1950s-era tracks that zig-zag from one ground-based radio beacon to another, wasting time and fuel compared with a direct great-circle route. Across the North Atlantic, the self-funded ATC corporations of Canada and the U.K. are using GPS-based surveillance to move the parallel flight tracks closer together (safely), so that more flights can fly at fuel-saving altitudes that take advantage of prevailing winds. That also means faster and more reliable trips for passengers.

Flights between the Northeast and the Caribbean must stay near the east coast to remain within range of radar coverage. Starting next year, space-based GPS surveillance will be available worldwide from a company called Aireon. That will

permit radar-like separation between planes that are beyond the range of radar, enabling them to fly shorter oceanic routes to the Caribbean. And those planes and their passengers would no longer have their flights held on the ground when storms block the coastal routes, delaying their vacations. Many ATC providers in other countries have signed up for this new service—but the FAA has not.

## TRIED AND TRUE

**LUCKILY FOR THE** United States, there is a better option.

In all other developed nations, reforms over the past 30 years have changed this traditional model. In more than 60 countries, the ATC entity has been separated from the transportation agency. Unlike in our system, where parties pay aviation taxes to the government and legislators micromanage what it is spent on, nearly everywhere else airspace users pay fees for service directly to the ATC provider, eliminating the political interference.

In the late 1980s, New Zealand was the first to divest its ATC system from the transport ministry and reorganize it as a self-supporting corporation. Over the following decade, more than a dozen other governments did likewise, including Australia, Canada, Germany, and the United Kingdom. By 1996, a critical mass of ATC corporations existed, leading to the formation of the Civil Air Navigation Services Organization (CANSO), which today has more than 80 members. The large majority are self-supporting companies.

Corporatization may not sound like a major change, but it dramatically alters incentives and practices. With the funding coming directly from those who use ATC services, a genuine customer-provider relationship develops. In the United States, by contrast, the FAA's de facto customer is Congress. That's where it gets its money, so that's whom it has to please.

In the United States, flight progress strips—that is, literal pieces of paper identifying the flight number, the aircraft type, and bits of information about the flight plan—are still hand-carried from one controller to another.



A revenue stream tied to a growing industry is also bondable. As with airports, electric utilities, and toll roads, a reliable revenue stream makes investors willing to buy revenue bonds, and those bonds enable large-scale projects to be paid for upfront. The FAA, like other government agencies, has no ability to issue bonds. That means large-scale facility and technology improvements can only be done in dribs and drabs out of the annual cash flow provided by Congress. Overseas ATC corporations such as Nav Canada and NATS have investment-grade bond ratings.

Now that there are lots of functioning ATC corporations, some with track records of two decades or longer, researchers have been able to review their performance. One of the first empirical studies was published in 2006 by the research firm MBS Ottawa in conjunction with U.S. and Canadian university scholars. It made before-and-after comparisons of 10 corporatized ATC providers on seven key performance indicators, including safety. In all cases, the measures were the same or better in the years following corporatization.

Two book-length academic works about the phenomenon have emerged as well. Both *Managing the Skies* (Ashgate), by Indiana University's Clinton Oster and William & Mary's John Strong, and *Institutional Reform of Air Navigation Service Providers* (Edward Elgar), by the Eno Center for Transportation's Rui Neiva, found that corporatization improved ATC services in an array of countries.

"From government agencies that used to serve their political overlords, they became independent service providers that serve the interests of their customers, the airspace users," Neiva concluded. "Commercialization has created leaner, more-focused organizations that are able to adapt more swiftly to rapidly changing operational and technological environments."

ATC corporatization also makes flying safer. In the 1950s and 1960s, the Atomic Energy Commission both promoted the use and regulated the safety of nuclear power. Recognizing that this was a conflict of interest, Congress divided it in 1974. But the FAA continues to regulate itself when it comes to the air traffic control system. The International Civil Aviation Organization in 2001 called for organizational separation between the two functions. The United States is one of the last holdouts.

The status quo leads to a conservative, low-innovation culture at the Air Traffic Organization. In 2014, I made the case in a peer-reviewed study that this stems largely from the ATO being inside the FAA's large safety-regulatory bureaucracy. There is plenty of innovation within the high-tech aerospace industry (Boeing, Honeywell, etc.). But innovators like these are regulated at arm's length by the FAA, not embedded within it.

To fix our broken ATC system, I suggest three remedies: First, separate the Air Traffic Organization from its safety regulator, so that it has the opportunity to develop a more innovative organizational culture.

Second, end dependence on the federal budget process, which subjects the ATC system to unstable annual appropriations, in favor of revenue-bond financing based on user charges paid directly to the revamped ATO.

And third, change the governance model. Today the FAA must somehow be responsive to 535 members of Congress, the senior staff of the Department of Transportation, the DOT Office of the Inspector General, the Government Accountability Office, and the Office of Management and Budget. Retired FAA officials say it's impossible to run a business when you have to report to that many different bodies with their disparate concerns. The alternative—which seems to be working well overseas—is a board of directors who represent the principal aviation stakeholders.

### LONG TIME COMING

ALAS, THESE RECOMMENDATIONS are not new. I've spent three decades arguing for reform, and countless researchers, political bodies, and aviation professionals have signed on to the calls for change.

Way back in 1975, a two-volume study by the "father of air traffic control," Glen A. Gilbert, suggested converting the current system into a U.S. Air Traffic Services Corporation. A 1985 study by the Air Transport Association suggested separating the ATC from the FAA. In 1993, then-Vice President Al Gore's National Performance Review found that the current organizational model was dysfunctional and proposed creation of a self-funded ATC corporation inspired by Airways New Zealand. And the Brookings Institution's Hamilton Project came out in favor of a self-funded ATC corporation in a 2008 report.

The Clinton administration came closest to producing organizational change. A 1995 reform bill was developed by a task force created by Transportation Secretary Federico Peña and supported by FAA Administrator David Hinson, but the bill never got out of the House Aviation Subcommittee. In 1997, the National Civil Aviation Review Commission (better known as the Mineta Commission) released a detailed report on reducing gridlock in the skies, which called for a separate ATC unit within the government. That in turn led to legislation in 2000 that created the Air Traffic Organization, pulling the various FAA branches that deal with ATC together under one chief operating officer. But Congress ignored the Mineta Commission's recommendation to implement user fees and revenue bonds.

In 2011, the CEO of the Business Roundtable, former Michigan Gov. John Engler, took an interest in this issue and asked me to create a working group to develop a new corporatization proposal. I recruited to the project a former FAA chief, top DOT officials, a former COO of the ATO, and several other experts. We spent most of 2012 developing a detailed plan, but when we presented it to the airlines, we got a cool reception. They knew the





kind of reform we were talking about would take a major effort and weren't sure it would be worth it.

Things changed dramatically in spring 2013, when the federal budget sequester hit the FAA hard. The airlines were suddenly far more interested—and so were the air traffic controllers. Further discussions with relevant stakeholder groups led to agreement that the private, nonprofit corporation model exemplified by Nav Canada was the best starting point for the United States. That fall, Engler briefed Rep. Bill Shuster (R-Penn.), chairman of the House Transportation & Infrastructure Committee, about the concept. That set into motion the reform bills that were introduced over the last few years.

Major media outlets, from *Air Transport World* and *Aviation Week* to *Bloomberg*, *The Economist*, *The Wall Street Journal*, *The Washington Post*, and *USA Today* have published editorials in support of corporatizing the United States' ATC system. Why, then, has this been so hard to get done?

Milton Friedman used the phrase *tyranny of the status quo* to describe the resistance to change by those who benefit from established governmental practices. When their benefits are threatened, people and organizations react, regardless of the overall merits of the proposal. In this case, the opposition, from private pilots to public employee unions, dug in hard. Together, they form a politically influential coalition. (For more on these players, see "Who Benefits from the Status Quo?" on page 23.)

Stopping ATC reform meant creating a narrative that downplayed the opponents' interest in maintaining the status quo

while painting a false picture of what corporatization would really mean. The master strategist in this effort was Ed Bolen, longtime head of the National Business Aviation Association (NBAA), a trade group representing business jet operators.

Back in 2007, as the FAA was considering replacing aviation taxes with ATC user fees, the NBAA had found itself embroiled in an epic battle with the airline trade group Air Transport Association (since renamed Airlines for America). The latter organization, which supported switching from ticket taxes to ATC fees, had launched an expensive media campaign depicting business jets as freeloaders. They *are* freeloaders—they pay a miniscule fuel tax to get the same services as airliners. But the airlines' rhetoric was over the top, and it created resentments that still simmer a decade later.

In response, the NBAA partnered with the Aircraft Owners & Pilots Association (AOPA) to create what Sourcewatch.org has termed an "astroturf front group" called the Alliance for Aviation Across America (AAAA). It recruited as early members the National Farmers Union and the League of Rural Voters. The National Association of State Aviation Officials, a protector of small-airport interests, came aboard later, as did a number of other "general aviation" (G.A.) organizations—that is, all those who fly or provide services to non-airline planes.

By 2015, the AAAA included over 5,500 individuals and organizations and Ed Bolen was its chairman. The talking points he developed were as follows: First, always call it "privatization," to mobilize public unions and their congressional allies against reform. Second, describe reform as a plot to turn over control of the ATC system to the major airlines. Third, portray the proposed ATC corporation as a for-profit entity motivated solely by a desire to bolster its bottom line, thus stoking fears that it would close down small control towers to save money. Fourth, claim that implementing ATC user fees would be equivalent to giving a private company the power to tax citizens. And fifth, describe the proposal as turning over U.S. airspace itself to private special interests, rather than just delegating the provision of a service within the public airspace.

AAAA paid for public opinion surveys in 2015 and 2017 that used loaded words, such as saying the proposal would "take" the system away from FAA and "privatize" it (which generally means selling it and possibly displacing current employees). They even suggested the corporation would be self-regulated. This yielded their desired answer: 62 percent of Americans opposed privatizing the ATC system as defined by the push-polling firm. AAAA then mobilized mayors and airport directors in small cities and rural states and organized letter-writing campaigns to members of Congress, strongly objecting to "the big airlines' takeover of the ATC system."

The current conflict began in 2015. Following a spate of informational hearings, Rep. Shuster introduced legislation in



early 2016 that was approved by his committee on a party-line vote but went no further. A revised bill was introduced this year and has been more successful; the proposed legislation stands a good chance of coming up for a vote this fall.

In 2015, well before the 2016 bill was introduced, senior Democrats on the House Transportation & Infrastructure Committee had received briefings on the subject. They knew full well that the proposal involved converting the existing Air Traffic Organization into a nonprofit corporation similar to Nav Canada, not selling it to private industry or contracting out its operations to private companies. In fact, the bill Shuster introduced in 2016 created a 13-member stakeholder board on which airlines would have only four seats; general and business aviation would have three. It didn't matter. The opposition rhetoric warned of "domination by the big airlines" and asserted that the board would consist of "special interests"—in short, it echoed the Bolen narrative.

As it happens, quite a few members of Congress from both parties are private pilots. The House and Senate General Aviation caucuses thus have bipartisan membership, and opposition to reform from the G.A. community has disproportionate influence on Capitol Hill. Currently, there are 35 senators and over 200 House members in the G.A. caucuses; during the 2016 Transportation & Infrastructure Committee vote on Shuster's original corporatization bill, two Republican G.A. members joined the Democrats in voting no.

## MILES TO GO

THE AAAA CAMPAIGN succeeded in creating fear, uncertainty, and doubt among its intended audience. So after the failure of the 2016 bill, I argued that the optics of our proposal were flawed. There was no hope of changing the NBAA's position. But if small-city and rural concerns and the fears of private pilots could be addressed, I hoped that fiscally conservative, limited-government members of the G.A. caucuses would be persuaded to change sides.

Substantive changes were needed. For example, in 2016, all four airline-nominated seats on the stakeholder board were to be from Airlines for America. But what about the regional airlines that provide virtually all the service to small airports? And what about airports themselves, another key stakeholder? Shuster and his people listened and revamped the proposed board structure: A seat for airports was added, and the major airlines would nominate only one of three airline board members, with the other two coming from the separate trade groups for regional and cargo airlines. The G.A. community would still get two seats.

The 2016 bill exempted noncommercial general aviation from paying ATC fees. In 2017, this was broadened to include all G.A., including air taxis and business jets. New provisions were

also added to require that any proposed reductions in ATC services be reviewed (and potentially vetoed) by top Department of Transportation officials. Still other provisions increased federal oversight of the ATC corporation beyond arm's-length safety regulations. Additionally, the FAA would continue the federal airport grants program, to be paid for by scaled-back aviation excise taxes.

These provisions were discussed and negotiated with the co-chair of the House G.A. Caucus, Rep. Sam Graves (R-Mo.). They satisfied all his concerns, and he agreed to support the 2017 effort. Moreover, thanks in part to President Donald Trump's high-profile endorsement of ATC reform, House Republican leadership has made enacting the bill this year a high priority. The prospects look good for passage by the full body.

But even though G.A. interests got everything they'd asked for, this year's successful Transportation & Infrastructure Committee vote was greeted with a declaration of war. With its substantive arguments made irrelevant by the changes, AOPA offered a bizarre public explanation for its continuing refusal of support: "We have concluded that any structural and governance reforms that require protections for an important sector of users is fundamentally flawed," the trade association announced. Before long, AOPA and the other rural and G.A. opponents had returned to the Bolen talking points about "a nearly unified airline assault for control of the nation's air traffic control system."

The FAA's current authorization expires at the end of the fiscal year, September 30, and corporatization is a major component of the House bill to "reauthorize" the agency. But the floor vote was delayed until after Labor Day, and the Senate's FAA reauthorization does not include an ATC corporatization section at all. This is good news for the status quo interests, who understand that low-population and rural states have far more influence in the upper chamber.

If both bills pass before the end of the fiscal year, the issue of corporatization will have to be hashed out in a House-Senate conference committee, and the resulting legislation would need to pass muster in both chambers. An alternative is that the two bodies could enact a temporary extension of the current FAA authorization, providing more opportunity for lobbying and debate. Of course, a temporary reauthorization does nothing to fix the many problems with America's embarrassingly outdated ATC system in the meantime.

The case for air traffic control corporatization remains strong on the merits. But those who want to protect what they have may yet prevail. The tyranny of the status quo is strong indeed. ■

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# WHO BENEFITS FROM THE STATUS QUO?

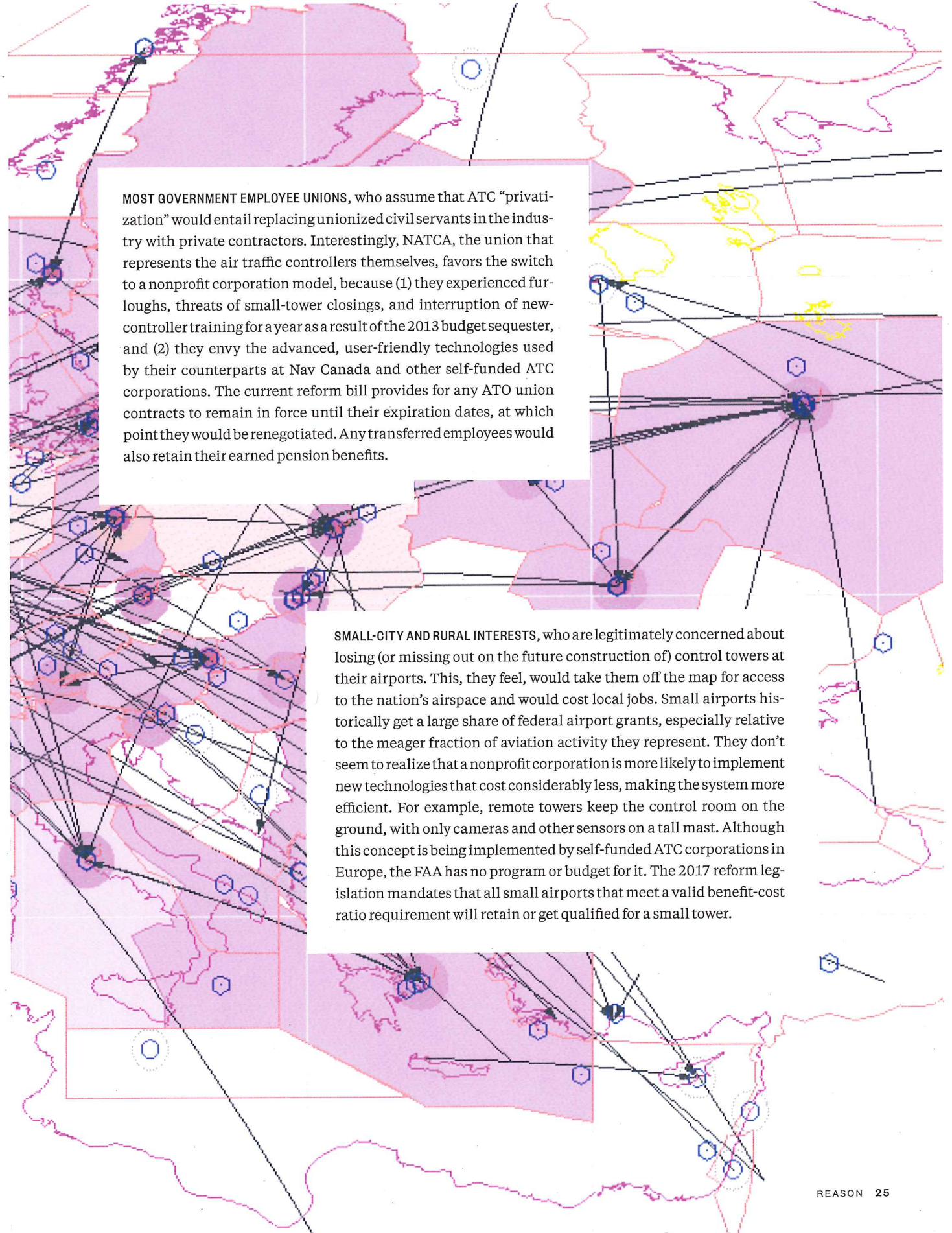
SEVERAL KEY GROUPS BENEFIT FROM THE CURRENT TAX-FUNDED, GOVERNMENT-RUN AIR TRAFFIC CONTROL SYSTEM.

**PRIVATE PILOTS**, represented by the Aircraft Owners & Pilots Association (AOPA), and the various companies and organizations that supply the “general aviation” (G.A.) community. Although many G.A. flights do not use air traffic control (ATC) services, those that do pay nothing directly. Instead, they owe a modest aviation fuel tax; the revenue from this tax makes up just 0.1 percent of the Federal Aviation Administration (FAA) budget. For decades, AOPA and the rest of the G.A. community have fought ATC corporatization out of fear that such a change would lead to the implementation of unaffordable user fees for some or all G.A. flights. Many countries do impose ATC charges on small private planes, but that is not true of Nav Canada, which is the model for American ATC reform. In Canada, small planes pay an annual fee of just 68 Canadian dollars.

**BUSINESS JET OPERATORS**, represented by the National Business Aviation Association (NBAA). These craft fly in the same airspace as airliners and use 10–12 percent of all ATC services, but their jet fuel taxes provide only 1.2 percent of the FAA’s budget. Everywhere else in the developed world, business jets pay standard weight-distance ATC fees, which this constituency in America would strongly prefer to avoid. But business jets are thriving worldwide, so ATC fees are obviously not curtailing those planes’ use.

**MEMBERS OF CONGRESS**, who have the authority to micromanage the FAA. When it comes to air traffic control, this often means preventing the consolidation of facilities (keeping many ATC facilities open becomes “protecting jobs in my district”) and specifying that the FAA must use certain technologies or systems (because politicians tend to favor established suppliers, many of whom are campaign contributors). Since a number of members of the House and Senate are also licensed private pilots, the General Aviation caucuses are disproportionately influential players on Capitol Hill.





**MOST GOVERNMENT EMPLOYEE UNIONS**, who assume that ATC “privatization” would entail replacing unionized civil servants in the industry with private contractors. Interestingly, NATCA, the union that represents the air traffic controllers themselves, favors the switch to a nonprofit corporation model, because (1) they experienced furloughs, threats of small-tower closings, and interruption of new-controller training for a year as a result of the 2013 budget sequester, and (2) they envy the advanced, user-friendly technologies used by their counterparts at Nav Canada and other self-funded ATC corporations. The current reform bill provides for any ATO union contracts to remain in force until their expiration dates, at which point they would be renegotiated. Any transferred employees would also retain their earned pension benefits.

**SMALL-CITY AND RURAL INTERESTS**, who are legitimately concerned about losing (or missing out on the future construction of) control towers at their airports. This, they feel, would take them off the map for access to the nation’s airspace and would cost local jobs. Small airports historically get a large share of federal airport grants, especially relative to the meager fraction of aviation activity they represent. They don’t seem to realize that a nonprofit corporation is more likely to implement new technologies that cost considerably less, making the system more efficient. For example, remote towers keep the control room on the ground, with only cameras and other sensors on a tall mast. Although this concept is being implemented by self-funded ATC corporations in Europe, the FAA has no program or budget for it. The 2017 reform legislation mandates that all small airports that meet a valid benefit-cost ratio requirement will retain or get qualified for a small tower.